53. A fluidic device, comprising:

a substrate with a material patterned thereon; and

a fluid path in fluid contact with the substrate such that the fluid path is in fluid contact with at least a portion of the material.

54. The fluidic device of claim 53, wherein the material is patterned onto the substrate in at least one strip.

55. The fluidic device of claim 54, wherein the material is patterned onto the substrate in a plurality of strips.

56. The fluidic device of claim 55, wherein at least portions of the plurality of strips are substantially linear.

57. The fluidic device of claim 56, wherein the portions of the plurality of strips that are substantially linear are substantially parallel.

58. The fluidic device of claim 53, further comprising a plurality of fluid paths.

59. The fluidic device of claim 58, wherein at least potions of the plurality of fluid paths are substantially linear.

60. The fluidic device of claim 59, wherein the portions of the plurality of fluid paths that are substantially linear are substantially parallel.

61. The fluidic device of claim 60, wherein the material is patterned onto the substrate in a plurality of strips, at least portions of the plurality of strips are substantially linear, substantially parallel, and substantially perpendicular to the portions of the plurality of fluid paths that are substantially linear and parallel.

62. A method of promoting interaction, comprising:

providing a fluidic system comprising a fluid path having a cross-sectional dimension of less than one millimeter and a first interaction material patterned therein; and

flowing a fluid comprising a second interaction material into the fluid path to allow interaction between the first and second interaction materials.

63. The method of claim 62, further comprising:

observing the interaction of the first and second interaction materials.

64. The method of claim 62, wherein providing further comprises providing a fluidic system comprising a plurality of fluid paths and a first plurality of interaction materials patterned within them and wherein flowing further comprises flowing a plurality of fluids comprising a second plurality to interaction materials into the plurality of fluid paths.

65. A gradient generation apparatus, comprising:

at least first, second, and third fluid paths each having a cross-section of less than one millimeter, the second and third fluid paths each comprising a mixing region;

a first inlet fluidly connected to the first and second fluid paths;

a second inlet fluidly connected to the second and third fluid paths; and

a first connecting path fluidly connected to the second fluid path downstream of its mixing region and fluidly connected to the third fluid path upstream of its mixing region.

66. The gradient generation apparatus of claim 65, wherein the first and second fluid paths are sized and arranged such that fluid introduced into the first inlet is divided evenly between them.

67. The gradient generation apparatus of claim 66, wherein the second and third fluid paths are sized and arranged such that fluid introduced into the second inlet is divided evenly between them.

68. The gradient generation apparatus of claim 65, further comprising:

a fourth fluid path fluidly connected to the second inlet and a mixing region; and

a second connecting path connected to the third fluid path downstream of its mixing region and connected to the fourth fluid path upstream of its mixing region.

69. The gradient generation apparatus of claim 68, wherein the second, third and fourth fluid paths are sized and arranged such that fluid introduced into the second inlet is divided evenly between them.

70. The gradient generation apparatus of claim 65, wherein the mixing region comprises a static mixer.

71. The gradient generation apparatus of claim 70, wherein the static mixer comprises a chaotic advective mixer.

72. The gradient generation apparatus of claim 65 further comprising a sensor associated with at least one of the fluid paths.

73. The gradient generation apparatus of claim 72 further comprising a plurality of sensors, each of which is associated with a fluid path.

74. The gradient generation apparatus of claim 72 wherein the sensor is in fluid communication with the at least one fluid path.

75. The gradient generation apparatus of claim 74 wherein the sensor comprises an electrode.

76. The gradient generation apparatus of claim 73 wherein each sensor is in communication with a microprocessor.

77. A method comprising:

flowing a first fluid into a first channel;

flowing a second fluid into a second channel;

mixing at least a portion of the first fluid with a portion of the second fluid in a third channel to form a third fluid;

mixing at least a portion of the third fluid with a portion of the second fluid to form a fourth fluid;

flowing the third fluid past a first sensor; and

flowing the fourth fluid past a second sensor

78. The method of claim 77 further comprising sensing a property of the third fluid and sensing a property of the fourth fluid.

79. The method of claim 78 wherein sensing a property of the third fluid and sensing a property of the fourth fluid occur substantially simultaneously.

80. The method of claim 78 wherein the first fluid comprises a sample and the second fluid comprises a reagent.

81. The method of claim 78 wherein the first fluid comprises a reagent and the second fluid comprises a sample.

82. The method of claim 77 wherein at least one of the channels is a microfluidic channel.

83. An apparatus, comprising:

at least first, second, and third fluid paths each having an inlet end and a region downstream from the inlet end;